Abstract of the Invention

The present invention provides for a test system having a test executive software system for performing tests on units under test. The test executive software system includes a test kernel component that provides control through a generic interface to the test executive software. Test components, instrument components, support objects and a test system interface component are communicatively coupled to the test kernel component. The instrument components can be written as a dynamically linked library (DLL) file so that the instrument component can be broken into basic functional modules associated with the particular instrument type. Each instrument component supports operation in both live mode and virtual mode, so that testing can be performed in both normal mode and simulation mode. Virtual mode allows instruments to be inserted and removed without impacting test applications that do not utilize them, thereby reducing tester downtime.